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Dated: November 13, 2008
Electronic Signature for Andrew T. Zidel: /Andrew T. Zidel/

Docket No.: SCEI 3.0-170
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Keisuke Inoue

Application No.: 10/812,177

Group Art Unit: 2128

Filed: March 29, 2004

Examiner: S. A. Alhija

For: METHODS AND APPARATUS FOR
ACHIEVING THERMAL MANAGEMENT
USING PROCESSING TASK SCHEDULING

APPELLANT'S REPLY BRIEF ON APPEAL

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant submits this Reply Brief pursuant to 37 C.F.R. § 41.41, which is responsive to the Examiner's Answer dated September 18, 2008.

STATUS OF CLAIMS

As explained in the appeal brief dated June 26, 2008, claims 1-89 were originally filed in the instant application on March 29, 2004. Claims 12, 25, 32, 61 and 62 were cancelled during prosecution. Claims 1-11, 13-24, 26-31, 33-60 and 63-89 stand rejected. Appellant has appealed from the rejections in the Office Action dated February 4, 2008. All of the pending claims, i.e., claims 1-11, 13-24, 26-31, 33-60, and 63-89, are being appealed.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

There are three grounds of rejection which appellant has appealed. As explained in the appeal brief, they are:

- I. Whether the § 101 rejection of claims 1-11, 24, 26-31, 33-34, 53-60 and 63 is valid.
- II. Whether the § 112, second paragraph multiplicity rejection of claims 1-11, 13-24, 26-31, 33-60, and 63-89 is valid.
- III. Whether claims 1-11, 24, 26-31, 33-34, 53-60, and 63 are anticipated under 35 U.S.C. § 102(b) by U.S. Patent Publication No. 2002/0065049 ("Chauvel").

The appeal brief addressed the numerous deficiencies and defects in these rejections. This reply brief focuses on a few particular issues, including the proper standard for a § 101 rejection in view of a recent Federal Circuit decision, *In re Bilski*, No. 2007-1130, 2008 U.S. App. LEXIS 22479 (Fed. Cir. Oct. 30, 2008). Pursuant to 37 C.F.R. § 41.12(4), a copy of the *Bilski* opinion accompanies the reply brief.

ARGUMENT**I. THE § 101 STATUTORY SUBJECT REJECTION OF CLAIMS 1-11, 24, 26-31, 33-34, 53-60, AND 63**

The § 101 rejection from the February 4, 2008 Office Action and the Examiner's Answer focuses on a "useful, concrete, and tangible result" test. (See Examiner's Answer, sections 9.1.i, 9.1.ii; see also section 10.2, at 12.) However, that test was found to be invalid by the Federal Circuit in the case of *Bilski*. The *Bilski* court held "we also conclude that the 'useful, concrete and tangible result' inquiry is inadequate and reaffirm that the machine-or-transformation test outlined by the Supreme Court is the proper test to apply." *Bilski*, 2008 U.S.

App. LEXIS 22479, at *40. In view of this, appellant submits that the rejection based on the "useful, concrete, and tangible result" test is invalid and should be overturned.

According to *Bilski*, the "machine-or-transformation test is a two-branched inquiry; an applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article." *Id.* at *46. With regard to the latter inquiry, "[a] claimed process is patent-eligible if it transforms an article into a different state or thing. This transformation must be central to the purpose of the claimed process." *Id.* at *47. As noted by the Court, even mere "electronic transformation of the data itself into a visual depiction" is sufficient. *Id.* at *50. No transformation of an underlying physical object is necessary.

Of the three independent claims subject to the § 101 rejection (*i.e.*, claims 1, 24 and 53), only claim 1 is a method claim. Claim 24 is directed to a system and claim 53 is directed to an apparatus. The specific "machines" of claims 24 and 53 include elements having well-defined structures. Appellant submits that for these two independent claims, they are tied to a particular machine and satisfy the requirements of § 101.

Turning to the method of claim 1, this claim recites
a method of scheduling operations to be performed by a component having a thermal threshold comprising: providing a plurality of operations to be performed by the component; associating the operations with a thermal attribute, the thermal attribute representing a value related to a heat amount expected to be generated or incurred by the component during performance of the operations; determining a cooling attribute; scheduling the operations in an order of performance based on the thermal attribute and the cooling attribute so that the thermal threshold is not exceeded; and generating the

order of performance for use in execution of the operations.

Appellant submits that claim 1 is statutory under § 101 as it provides a practical application to transform specific data associated with a component. For instance, upon associating the operations with a thermal attribute and determining a cooling attribute, the method provides for scheduling such operations in a given order of performance so that the thermal threshold of the component is not exceeded. The order of performance is generated as well.

Furthermore, a number of dependent claims are also associated with various "machines." For instance, in dependent claim 2 the thermal attribute is measured by a temperature sensing means. Appellant submits that this claim is necessarily "tied to a particular machine" per *Bilski*. Similarly, dependent claim 6 is "tied to a particular machine" as it requires "the component executing the operations in the order of performance." And dependent claim 9 is also "tied to a particular machine" as it requires "monitoring the selected processing devices" and "routing the operations among the selected processing devices so that the individual thermal thresholds are not exceeded."

In view of the above and the arguments presented in the appeal brief, appellant submits that the § 101 rejection is improper and the claimed invention satisfies the statutory requirements for patentable subject matter.

Finally, as noted in the appeal brief, the Office Action issued what appears to be a blanket § 101 rejection of claims 1-12, 24-34, and 53-63. See section 9.1.iii of the Examiner's Answer for a restatement of this rejection. Appellant submits that the Examiner improperly read limitations into the claims from the specification. For instance, one rationale is that "the compiler is a key part of Applicants invention, as can be

seen in Figures 2 and 11." (Examiner's Answer, numbered section 10.2, at 12.) While the Examiner states that the "claims are not being limited by the citation of the specification provided by the Examiner," that is exactly what the Examiner attempts to do. (*Id.*) In particular, the Examiner states in the immediately following sentence "the claims need not explicitly recite the compiler since per the specification the compiler is a clear part of the processing devices and components." (*Id.* (emphasis added).) In the very next sentence, the Examiner refers to the figures to support his position as quoted above.

To the extent that the Examiner asserts that merely including a component in a couple of figures or referencing it elsewhere in the specification renders it a "key part" of any invention and therefore must be read into the claims, then appellant must disagree in the strongest possible terms. The Examiner's assertions and rationales for importing limitations from the specification (including the drawings) into the claims have no basis in the law, USPTO regulations, guidelines, or any other documentation of which appellant is aware. It is blackletter law that "limitations from the specification are not to be read into the claims." *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1326 (Fed. Cir. 2002).

For the reasons set forth above and in the appeal brief, appellant submits that the blanket rejection is contrary to the law and should be overturned.

II. THE § 112, SECOND PARAGRAPH MULTIPLICITY REJECTION OF CLAIMS 1-11, 13-24, 26-31, 33-60, AND 63-89

The appeal brief provided a detailed discussion of why the multiplicity rejection is improper. By way of example, appellant discussed various features of the 11 independent claims at issue, showing that the elements of each claim are

clear and concise. Appellant emphasizes that the Examiner's ground of rejection did not present any articulated reasons, but rather merely stated a conclusion that was coupled to several catchphrases. As explained in the appeal brief, the *Manual of Patent Examining Procedure* ("M.P.E.P.") expressly cautions against unsupported rejections. See M.P.E.P. § 706.03 ("such rejection should be stated with a full development of the reasons rather than by a mere conclusion coupled with some stereotyped expression.").

The Examiner's Answer spends slightly more than one page attempting to refute the appeal brief. As with the rejection itself, the Examiner's Answer parrots conclusory statements and asserts them as proof of multiplicity. "Just based on the explanations of the claims provided it can be seen that the multitude of independent claims result in 'maze of confusion.'" (Examiner's Answer numbered section 10.1, at 11.) According to the Examiner, "it is unclear how the claims inter-relate to each other for the purposes of patent coverage or furthermore how they serve to clarify Appellants invention." (*Id.*) Again, these are merely conclusory statements that do not provide any examples of substantial duplication or lack of material differentiation. Appellant submits that such statements by the Examiner are clearly improper. See *In re Flint*, 411 F.2d 1353, 1356 (C.C.P.A. 1969) (holding that an examiner's "'mere opinion' is insufficient.").

Appellant submits that different claims focus on particular features and aspects of the invention. Seeking claims of varying scope and type is clearly proper, as "an applicant should be allowed to determine the necessary number and scope of his claims, provided he pays the required fees and otherwise complies with the statute." *In re Wakefield*, 422 F.2d 897, 900 (C.C.P.A. 1970). That is exactly what applicant has done.

Approximately half of the one page response of the Examiner's Answer is a "simplified explanation" of the 11 independent claims at issue, wherein each "explanation" is a single sentence reciting selected keywords from a given claim. For instance, according to the Examiner, method claims 1 and 13 each "recite thermal attributes, thermal thresholds, and scheduling," method claim 44 recites thermal attributes and thermal thresholds, method claim 50 "recites thermal thresholds," and method claim 66 recites "thermal attributes and tasks." (Examiner's Answer numbered section 10.1, at 11.) In winnowing each claim down to a few keywords, the Examiner asserts, again without any basis in fact, that the variation of such limitations "is confusing and counterproductive to the clarity of the application and the invention." (*Id.*) Again, the Examiner fails to explain why he is confused, providing no specific examples or other facts to support his position. Furthermore, appellant submits that the standard for supporting a multiplicity rejection is not whether it is "counterproductive to the clarity of the application ..." as suggested by the Examiner. (*Id.*)

Of the 11 independent claims, five are method claims, three are system claims, and three are apparatus claims. All of the independent claims implement various aspects and embodiments of the invention which are described throughout the specification. For instance, certain embodiments are addressed in the Abstract as follows:

In one embodiment, thermal attributes are associated with operations and/or processing components, and the operations are scheduled for processing by the components so that a thermal threshold is not exceeded. In another embodiment, hot and cool queues are provided for selected operations, and the processing components can select operations from the

appropriate queue so that the thermal threshold is not exceeded.

(Abstract (emphasis added).)

The Summary of the Invention section of appellant's specification also addresses a number of embodiments and examples for such embodiments. By way of example only, the five independent method claims will now be addressed. Aspects of method claim 1 (a "method of scheduling operations to be performed by a component having a thermal threshold") are reflected in the embodiment recited at page 3, lines 5-16 of the specification (numbered paragraph [0009]). Aspects of method claim 13 (a "thermal scheduling method" including "obtaining program code including a series of operations") are reflected in the embodiment recited at page 4, lines 21-27 of the specification (numbered paragraph [0014]). Similarly, aspects of method claim 44 (a "method of performing operations in a computing environment" including storing first and second operations based on a thermal attribute and retrieving at least one operation depending on a thermal threshold of a processor) are reflected at page 8, lines 1-8 of the specification (paragraph [0028]). Aspects of method claim 50 (a "method of performing operations in a computing environment" including determining if a thermal threshold is not exceeded and executing different operations depending upon whether such operations would be likely to increase or decrease the temperature of the processor) are found at page 8, line 28 to page 9, line 5 of the specification (paragraph [0032]). And aspects of method claim 66 (a "method of processing tasks" including selecting one of multiple tasks for execution by a component based on an attribute, where the attribute is related to the temperature of the component after execution of the associated task) are found at page 11, lines 14-20 of the specification (paragraph [0040]).

Furthermore, various dependent method claims, such as claims 48 (which depends from claim 44), 52 (which depends from 50), and 70 (which depends from claim 66), introduce queues, such as priority queues and queues for storing tasks which meet different conditions.

Appellant submits that the number and type of such claims is more than reasonable given the wide variety of inventive concepts set forth in the application. Furthermore, the Examiner has provided no concrete examples to support his contention that the claims are unclear. The Examiner likewise failed to provide any rationale why the claims on appeal "result in a 'maze of confusion'" as stated in the Examiner's Answer. (Examiner's Answer numbered section 9.2, at 4.)

Thus, it appears the Examiner is relying solely on his opinion that there are too many independent claims. As discussed above, an Examiner's mere opinion for a multiplicity rejection is clearly improper.

For unknown reasons, the Examiner continues to maintain that "Applicants did not disagree with the reasoning provided or the rejection itself when they elected claims 1-12, 24-34, and 53-63 to be examined." (*Id.* numbered section 10.1, at 12.) Nothing could be further from the facts. In contrast to the Examiner's assertion, the facts show that appellant did not, and still does not agree with the rejection. No valid reasoning was ever provided to appellant. As explained in the appeal brief, appellant has consistently traversed the rejection.

In view of the appeal brief and the above discussion, appellant respectfully submits that the Examiner has failed to satisfy his burden in establishing a proper rejection for undue multiplicity.

III. THE § 102 REJECTION OF CLAIMS 1-11, 24, 26-31,
33-34, 53-60, AND 63 AS BEING ANTICIPATED BY CHAUVEL

The appeal brief provided a detailed discussion of why Chauvel does not anticipate the rejected claims. In response, the Examiner made a number of assertions that are erroneous.

Firstly, the Examiner stated "that the features upon which applicant relies (i.e., 'cooling attribute' as allegedly defined in Appellants specification) are not recited in the rejected claim(s)." (Examiner's Answer numbered section 10.3, at 13.) As explained in the appeal brief at Part III.C, claim 31 depends from claim 30, which in turn depends from claim 24. Claim 31 requires that "the task thermal attribute is based on at least one of an operating frequency of the component, a thermal attribute of the component, and a cooling attribute." Thus, the Examiner's contention that the features recited in the appeal brief, including the cooling attribute, are not found in the recited claims is without merit. Furthermore, the Examiner's reference to paragraphs 14, 20, and 23 is erroneous. References to the cooling attribute may be found, by way of example only, at specification paragraph 13 (p.4 ll.11-20), paragraph 19 (p.5 ll.15-25), paragraph 22 (p.6 ll.14-21), paragraphs 82-83 (p.24 l.12 to p.26 l.2), paragraph 85 (p.27 l.5 to p.28 l.9), and paragraph 87 (p.28 l.26 to p.29 l.16).

Secondly, the Examiner also stated that "the features upon which applicant relies (i.e., 'queue' as defined in Applicants specification) are not recited in the rejected claim(s)." This statement plainly ignores the express limitations of independent claims 24 and 53, which were rejected as being anticipated by Chauvel. By way of example only, as discussed in the appeal brief at Part III.B, independent claim 24 recites "a plurality of priority queues, each priority queue including a first queue and a second queue, the first queue for storing a first set of

the operations and the second queue for storing a second set of the operations." And as discussed in the appeal brief at Part III.D, independent claim 53 recites "wherein the memory comprises a local store in the sub-processing unit, and the local store includes a first queue for managing the first operation and a second queue for managing the second operation." The erroneous statements in the Examiner's Answer regarding limitations which are clearly claimed underscores one of the many fatal flaws in the rejections on appeal.

Finally, the Examiner asserts that "attributes are inherent in the desktop/portable computers discussed in the reference in the form of fans and heat sinks as well as in the inherent nature of cooling in that following a lack of power supplied to an IC the IC will begin to cool." (Examiner's Answer numbered section 10.3 (emphasis added).) The Examiner appears to ignore the requirements of attributes as they are recited in the claims. For instance, independent method claim 1 requires "associating the operations with a thermal attribute, the thermal attribute representing a value related to a heat amount expected to be generated or incurred by the component during performance of the operations." (Emphasis added.) And system claim 24 requires "at least one thermal attribute associated with the component and a selected one of the operations, the thermal attribute being indicative of a change in temperature of the component after performance of the selected operation." (Emphasis added.)

To the extent that the Examiner is relying on inherency, then appellant submits that he must provide some rationale or evidence showing inherency. "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the

teachings of the applied prior art." *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (B.P.A.I. 1990) (emphasis added). The examination requirements as explained in the M.P.E.P. are fully consistent with this. See M.P.E.P., which states:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted)

Id. § 2112(IV) (emphasis in original).

Appellant respectfully submits that the Examiner has failed to provide a factual basis or technical reasoning why the particular limitations as claimed (e.g., the "thermal attribute" of claims 1 and 24) is inherently found in Chauvel. There is simply no evidence in the record to support the contention that Chauvel's desktop/portable computers include an attribute that is indicative of a change in temperature of the component after performance of the selected operation or that is indicative of a change in temperature of the component after performance of the selected operation as claimed. Thus, the Examiner's unsupported contentions have no merit.

In view of the appeal brief and the aforementioned discussions, appellant respectfully requests that the rejections on appeal be overturned.

Application No.: 10/812,177

Docket No.: SCEI 3.0-170

Dated: November 13, 2008

Respectfully submitted,

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